AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A ~~Method~~ method of coding a signal~~, in particular an audio or speech signal,~~ using a codebook search of a codebook, comprising:

~~wherein a codebook comprising k code vectors is provided for vector quantization of a signal vector representing a set of signal values of said signal, performing a codebook search for determining an optimal code vector of said codebook, wherein said codebook search is performed in parallel~~

~~by~~ dividing said codebook into ~~p~~ a plurality of codebook groups, where the codebook comprises a plurality of code vectors for vector quantization of a signal vector representing a set of signal values of said signal;~~,~~

~~by~~ simultaneously determining ~~p~~ plurality of optimal group code vectors, each of which corresponds to one of said ~~p~~ plurality of codebook groups;~~,~~ and

~~by~~ determining ~~said~~ an optimal code vector of said codebook from ~~among~~ said ~~p~~ plurality of optimal group code vectors.

2. (currently amended): The ~~Method~~ method according to claim 1, wherein said ~~step of~~ determining said optimal code vector among said ~~p~~ plurality of optimal group code vectors comprises evaluating an index of each optimal group code vector uniquely identifying each optimal group code vector within said codebook.

3. (currently amended): The ~~Method~~ method according to claim 1, wherein said vector quantization is of ~~the~~ a shape-gain type.

4. (currently amended): The ~~Method~~ method according to claim 1, further comprising ~~wherein~~ performing a comparison of the plurality of code vectors ~~is performed~~ within said codebook search to determine the optimal code vector, wherein said comparison is based on a cross multiplication expression

$$C_t * E_{best} >< E_t * C_{best},$$

which is based on fixed point operations ~~and leads exactly to the same result as a standardized serial algorithm~~, wherein C_t is a ~~so-called~~ cross term corresponding to a t-th code vector and C_{best} is the cross term corresponding to a temporarily best code vector, and wherein E_t is a ~~so-called~~ energy term corresponding to said t-th code vector and E_{best} is the energy term corresponding to said temporarily best code vector.

5. (currently amended): The ~~Method~~ method according to claim 1, wherein said method is based on a code excited linear prediction (CELP) algorithm comprising a synthesis section, and wherein elements of a matrix representing a transfer function of at least one filter of said synthesis section, and/or elements of auto-correlation matrices used within said CELP-algorithm and/or further precalculation and postcalculation steps for ~~a~~/said comparison of code vectors are generated/evaluated in parallel.

6. (currently amended): The ~~Method~~ method according to claim 1, wherein said codebook comprises pulse code vectors.

7. (currently amended): ~~Method according to claim 1~~A processor for coding a signal, wherein ~~a~~ the processor comprises:~~with~~

configurable hardware ~~and/or~~ with an acceleration module which ~~means perform~~performs codebook search comprising:

dividing said codebook into plurality of codebook groups, where the codebook comprises a plurality of code vectors for vector quantization of a signal vector representing a set of signal values of said signal;

simultaneously determining plurality of optimal group code vectors, where each of the plurality of optimal group code vectors corresponds to one of said plurality of codebook groups; and

determining said optimal code vector of said codebook from the plurality of optimal group code vectors;

wherein the codebook search is performed in ~~specifically designed for said method is used for~~ parallel execution ~~of steps of said method~~.

8. (currently amended): The ~~Method~~ processor according to claim 7~~, wherein said processor provides~~ further comprising means for simultaneously accessing a plurality of said signal values located in a memory.

9. (currently amended): The ~~Method~~ processor according to claim 7~~1~~, wherein the processor is a standard processor further comprising calculation module~~, in particular a digital signal processor, is used for~~ wherein the standard processor performs the parallel execution of ~~steps of~~ said ~~method~~codebook search, and wherein ~~said steps of~~ said ~~method~~ codebook search ~~are~~ is optimized regarding at least one of the calculation ~~means~~ module of said standard processor and~~/or~~ execution time.

10. (cancelled).

11. (currently amended): A ~~Coder~~ coder and a decoder~~, in particular speech and/or audio signal CODEC~~, capable of performing ~~a~~ the method according to claim 1.

12. (new): The method according to claim 1, wherein the signal is an audio or speech signal.

13. (new): The processor according to claim 7, wherein the processor is a digital signal processor.

14. (new): The method according to claim 11, wherein the coder and decoder are at least one of speech and audio signal CODECs.

15. (new): The processor according to claim 7, further comprising a plurality of calculation units, each of which determines optimal group code vectors of a respective one of the

plurality of codebook groups, wherein the plurality of calculation units execute said determining simultaneously.

16. (new): The method according to claim 1, wherein each codebook group comprises a number of code vectors wherein the number of code vectors is a fraction of the plurality of code vectors.

17. (new): The method according to claim 1, wherein each code vector is uniquely identifiable by a unique index.

18. (new): The method according to claim 17, wherein the code vectors contained in a first codebook group are mutually exclusive from the code vectors contained in a second codebook group.